

highest was 83° , at Rocky Mount on the 2d, and the lowest, 16° at Burkes Garden on the 7th. The average precipitation was 1.24, or 1.54 below normal; the greatest monthly amount, 2.96, occurred at Miller School, and the least, 0.38, at Cliftonforge.

The progress of the crops and farm work was highly satisfactory, reports from all portions of the State where winter wheat is grown indicate this crop to be making excellent progress and as being generally in advance of its normal condition at this time.—*E. A. Evans.*

Washington.—The mean temperature was 50.4° , or 6.5° above normal, and the highest ever recorded since the establishment of the Washington service in 1890; the highest was 72° , at Walla Walla on the 14th, and the lowest, 25° , at Moxee on the 5th, at Usk on the 15th, and at Ellensburg on the 22d. The average precipitation was 8.82, or 2.77 above normal; the greatest monthly amount, 29.87, occurred at Neah, and the least, 0.43, at Connell.—*A. B. Wollaber.*

West Virginia.—The mean temperature was 45.6° , or 1.6° above normal; the highest was 83° , at Uppertrack on the 2d, and the lowest, 14° , at Dayton on the 26th. The average precipitation was 1.93, or 0.86 below normal; the greatest monthly amount, 3.49, occurred at Rowelsburg, and the least, 0.48, at Oldfields.—*E. C. Vose.*

Wisconsin.—The mean temperature was 40.3° , or 8.2° above normal; the highest was 72° , at Westbend on the 21st, and the lowest, 10° , at Osceola and Valley Junction on the 3d. The average precipitation was 1.07, or 0.56 below normal; the greatest monthly amount, 3.64, occurred at Sharon, and the least, trace, at Florence.—*W. M. Wilson.*

Wyoming.—The mean temperature was 36.4° , or 4.6° above normal; the highest was 80° , at Burlington on the 16th, and the lowest, 4° below zero, at Jackson. The average precipitation was 0.13, or less than one-fifth of the normal; the greatest monthly amount, 0.91, occurred at Rawlins, while none fell at several stations.—*W. S. Palmer.*

SPECIAL CONTRIBUTIONS.

OBSERVATIONS AT HONOLULU.

Through the kind cooperation of Mr. Curtis J. Lyons, Meteorologist to the Government Survey, the monthly report of meteorological conditions at Honolulu is now made partly in accordance with the new form, No. 1040, and the arrangement of the columns, therefore, differs from those previously published.

Meteorological observations at Honolulu, November, 1899.

The station is at $21^{\circ} 18' N.$, $157^{\circ} 50' W.$.

Pressure is corrected for temperature and reduced to sea level, and the gravity correction, -0.06 , has been applied.

The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 12, or Beaufort scale. Two directions of wind, or values of wind force or amounts of cloudiness, connected by a dash, indicate change from one to the other.

The rainfall for twenty-four hours has always been measured at 10:39 p. m., not 1 p. m., Greenwich time, on the respective dates.

The rain gage, 8 inches in diameter, is 1 foot above ground. Thermometer, 9 feet above ground. Ground is 43 feet, and the barometer 50 feet above sea level.

Date.	Pressure at sea level. Dry bulb. Wet bulb.	Temperature. Temperature. Maximum. Minimum. Dew point. Relative humidity.	During twenty-four hours preceding 1 p. m., Greenwich time, or 2:39 a. m., Honolulu time.						Total rainfall at 9 a. m., local time.			
			Means.	Wind.		Sea-level pressures. Maximum. Minimum.						
				Prevailing direction.	Force.	Average cloudiness.						
1.....	*	+	+	76	67	61.7	63	nne.	8-4	30.09	30.01	0.02
2.....	30.02	70	62	77	65	56.3	55	n-ne.	2-4	30.06	29.96	0.00
3.....	30.01	72	64.5	78	71	59.7	61	nne.	3-4	30.08	29.98	0.00
4.....	30.03	73	65.5	78	73	62.5	56	ne.	5-3	30.08	29.98	0.00
5.....	30.01	64	61.5	79	72	62.8	64	ne.	3	30.08	29.97	0.00
6.....	29.97	64	62	80	64	61.0	70	nne.	1-4-0	30.04	29.95	0.00
7.....	29.96	70	67	81	68	64.0	78	nne.	1-0	30.02	29.92	0.01
8.....	29.98	67	65	82	68	65.7	75	nne.	1	30.03	29.94	0.00
9.....	30.02	71	69	82	67	65.0	73	ne.	2	30.06	29.97	0.08
10.....	30.01	71	65	79	70	66.0	77	ne.	3-0	30.06	29.96	0.00
11.....	29.97	73	64.5	80	70	61.5	62	nne.	3	30.04	29.95	0.00
12.....	29.92	71	67	80	73	61.0	60	nne.	2	30.02	29.93	0.05
13.....	29.93	73	66	80	70	68.7	71	1-4	5-2	30.00	29.98	0.01
14.....	29.98	74	66.5	80	72	68.7	68	ene.	3	30.00	29.98	0.01
15.....	30.00	73	65	80	73	68.0	64	ne.	4	30.04	29.95	0.01
16.....	30.02	73	67	79	73	61.5	65	pne.	4	30.08	29.97	0.08
17.....	30.00	74	66	79	73	64.5	68	ene.	4	30.08	30.00	0.00
18.....	30.03	74	64.5	80	73	61.0	61	nne.	2-5	30.09	30.02	0.00
19.....	30.04	72	63.5	81	73	62.7	64	nne.	3	30.09	29.98	0.00
20.....	30.04	72	65.5	80	73	60.8	59	ene.	3	30.10	30.00	0.00
21.....	30.02	73	65	79	71	61.7	66	ene.	3	30.10	30.01	0.00
22.....	30.03	72	64	79	73	59.8	59	ne.	3-0	30.06	29.97	0.00
23.....	29.98	61	62	81	70	60.7	62	nne.	3-0	30.05	29.95	0.00
24.....	29.95	65	62.5	81	64	61.7	72	s-n.	1-0	30.03	29.90	0.00
25.....	29.91	64	63	79	68	63.5	77	sw-nw.	1-0	30.04	29.99	0.00
26.....	29.98	65	63	79	68	67	79	sw-w.	1	30.04	29.98	0.00
27.....	30.00	69	67	80	64	65.5	66	sw n.	1	30.03	29.93	0.06
28.....	30.10	71	65	79	67	64.3	75	n-nne.	2-5	30.11	30.03	0.21
29.....	30.07	71	66.5	74	67	68.7	75	nne.	4	30.16	30.08	0.30
30.....	30.01	71	65	78	71	64.5	73	ne.	3	30.10	29.99	0.00
Sums.											0.67	
Means.	30.00	70.3	64.8	79.3	69.1	62.5	69.1		2.9	3.9	30.010	29.963
Departure.	+ .05					- 8.5	- 7.6		- 0.7	+ .050	+ .050	- 4.85

Mean temperature for November, 1899 ($6+2+9$), $+8=73.5^{\circ}$; normal is 73.8° . Mean pressure for November ($9+3$) $+2=30.07$; normal is 29.957.

* This pressure is as recorded at 1 p. m., Greenwich time. † These temperatures are observed at 6 a. m., local, or 2:39 p. m., Greenwich time. ‡ These values are the means of ($6+2+9+3$) $+4$. § Beaufort scale.

RECENT PAPERS BEARING ON METEOROLOGY.

W. F. R. PHILLIPS, in charge of Library, etc.

The subjoined list of titles has been selected from the contents of the periodicals and serials recently received in the library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau:

Scientific American. New York. Vol. 81.

— The Lecornu Cellular Kite. P. 360.

— Relation of Rainfall to Boiler Scale. P. 386.

Archives des Sciences Physiques et Naturelles. Genève. 4 Période. Tome 8.

Rabot, O. Les variations de longueur des glaciers dans les régions arctiques et boréales (suite). P. 453.

Journal de Physique. Paris. 3me série. Tome 8.

Chauveau, A. B. Sur les variations diurnes de l'électricité atmosphérique. P. 599.

Nature. London. Vol. 61.

Wood, R. W. Cause of Dark Lightning and the Clayden Effect. P. 104.

Bryan, G. H. Resistance of the Air. P. 107.

Schurr, H. S. Barisal Guns. P. 127.

Memorias y Revista, Sociedad Científica "Antonio Alzate." Mexico. Tome 12.

Leal, M. El Clima de Leon. P. 435.

American Journal of Science. New Haven. Vol. 8.

Bigelow, F. H. Some of the Results of the International Cloud Work for the United States. P. 433.

Gaea. Leipzig. 36 Jahrg.

— Hildebrandsson's Untersuchungen über die Regenverteilung in ihrer Beziehung zu den Aktionszentren der Atmosphäre. P. 28.

— Der Harmattan. P. 34.

Philosophical Magazine. London. Vol. 48.

Callendar, H. L. On a Practical Thermometric Standard. P. 519.

L'Aerophile. Paris. 7me année.

Hermite, G. Ascension du ballon sonde *Aerophile* No. 4. P. 125.

La Nature. Paris. 28me Année.

Mocquery, O. Echelle thermométrique naturelle. P. 3.

Leroy, J. Un cyclone dans la forêt de Villers-Cotterets. P. 12.

Meteorologische Zeitschrift. Wien. Vol. 18.

Gockel, Albert. Messungen des Potential-gefälles der Lust-elektricität in Biscra. P. 481.

Jensen, Chr. Beiträge zur Photometrie des Himmels. (Schluss.) P. 488.

Hann, J. Ueber die Abhängigkeit der Amplitude der halbtägigen Barometer-Oscillation von der Geographischen Breite. P. 499.

Reimann, —. Abnorm dunkle Nächte. P. 504.

Hann, J. Klima von Cuba. P. 505.

Sapper, Karl. Resultate der meteorologischen Beobachtungen in der Republik Guatemala im Jahre 1898. P. 508.

Knipping, E. Zum Klima von Nauru. P. 511.

— Hagelfall und Trombe in Bizerte. P. 521.

Wiesner, J. Beiträge zur Kenntniss des photochemischen Klimas im arktischen Gebiete. (Review.) P. 525.

Journal of School Geography. Lancaster. Vol. 3.

Ward, R. DeC. Climate of the Philippine Islands. P. 361.

Naturwissenschaftliche Rundschau. Braunschweig. 14 Jahr.

Exner, Franz. Beiträge zur Kenntniss der atmosphärischen Elektricität. P. 609.